

B. Remarks:

Claims 1-5, 7-12 and 14-25 are pending.

Claims 1, 11, 20, 24 and 25 have been amended. Claims 3, 7, 8 and 18 have been cancelled. Claims 1, 11, 20, 24 and 25 have been amended to describe the viscosity of the oil as being from about 75 cSt to about 90 cSt at 25°C. Support for these amendments can be found in the Specification at page 5, lines 26-28. Claim 1 has also been amended to describe specific inhibitors useful with the present invention. Support for this amendment can be found in the Specification at page 9, line 17, to page 10, line 4. Claim 11 has been amended to describe the sulfur as being free sulfur. Support for this amendment can be found in the Specification at page 8, line 21-27. Claim 20 has been amended to include nonferrous metalworking and to describe the amounts of chemically unbound sulfur. Support for these amendments can be found in Claim 11 as originally filed. Claim 25 has been amended to correct a typographical error. Support for this amendment can be found in Claim 17 as originally filed.

Section 103 Rejections

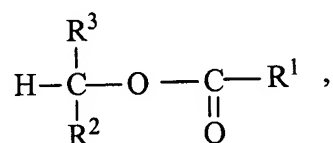
Claims 1-5, 7-12 and 14-25 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 4,416,788 to Apikos. Applicant traverses the rejection on the basis that the Examiner has failed to establish a prima facie case of obviousness.

Apikos is directed to a lubricating composition having a base oil with a wide viscosity range of 50 to 1,000 SUS (or about 7 to 220 cSt) at 100°F, preferably 70 to 500 SUS (or about 13 to 110 cSt) at 100°F. (Apikos, column 2, lines 1-5). The composition is described as containing from 0.1 to 0.5 weight percent elemental sulfur. (Apikos, column 3, lines 44-46). An ester component is also included as a lubricity additive. (Apikos, column 4, line 38, to column 5, line 61). The lubricating composition of Apikos is described as being transparent, and accordingly Apikos requires that the oil be transparent. (Apikos, column 1, lines 58-61). The viscosity of the

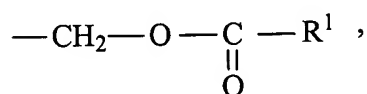
base oil used by Apikos is not a critical consideration as "oils of widely varying viscosities", as described above, are used. (Apikos, column 1, line 68, to column 2, line 1).

In contrast to Apikos, the present invention as defined by independent Claim 1 of the subject application is directed to a composition for lubricating metallic work pieces having improved load and wear properties and which is further non-corrosive to nonferrous work pieces as indicated by the copper strip corrosion classification values. The composition comprises:

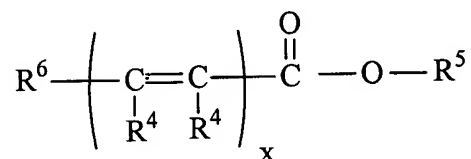
- (a) an oil having a viscosity of about 75 cSt to about 90 cSt at 25°C;
 - (b) free sulfur in an amount sufficient to provide lubrication, and
 - (c) a metal corrosion inhibitor to prevent corrosion of the work pieces;
- (i) where the metal corrosion inhibitor is a fatty oil selected from the group consisting of a glyceride, an ester of a carboxylic acid, and combinations thereof, where the glyceride is represented by the formula of



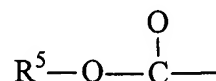
where R¹ is a saturated or unsaturated C₃ to C₂₄ aliphatic hydrocarbon, and R² or R³ is hydrogen or



where R¹ is as defined above, and the ester is represented by the formula of



where R⁴ is hydrogen or a saturated or unsaturated C₃ to C₁₂ aliphatic hydrocarbon, X is 1, 2 or 3, R⁵ is a saturated or unsaturated C₃ to C₂₄ aliphatic hydrocarbon, and R⁶ is represented by the formula of



where R^5 is as defined above;

- (ii) where the lubrication is demonstrated by a Falex reference load of greater than about 4,500 pounds force and by a Falex reference wear of less than ten teeth and
- (iii) further where the composition when maintained at 100°C for 2 hours has a copper strip corrosion classification from about 1a to about 3b.

In contrast to Apikos, the present invention as defined by independent Claim 11 of the subject application is directed to a composition for lubricating nonferrous metallic work pieces which is noncorrosive to the nonferrous work pieces as indicated by the copper strip corrosion classification values. The composition comprises:

- (a) an oil having a viscosity of about 75 cSt to about 90 cSt at 25°C suitable for heavy duty metalworking operations; and
- (b) free sulfur being present in amounts of about 0.4 percent to about 12 percent by weight of the composition;

where the composition does not corrode the nonferrous work pieces and further where the composition when maintained at 100°C for 2 hours has a copper strip corrosion classification from about 1a to about 3b.

In contrast to Apikos, the present invention as defined by independent Claim 20 of the subject application is directed to a method of making a composition which provides noncorrosive lubrication to nonferrous metalworking processes. The method comprises the steps of:

- (a) selecting a base oil having a viscosity of about 75 cSt to about 90 cSt at 25°C;
- (b) incorporating chemically unbound sulfur to the base oil to provide an extreme pressure lubricant, where the chemically unbound sulfur is from about 0.4 to about 12 weight percent of said composition; and
- (c) further incorporating a fatty oil to inhibit nonferrous metal corrosion.

In contrast to Apikos, the present invention as defined by independent Claim 24 of the subject application is directed to a method of providing noncorrosive lubrication to the metalworking of a nonferrous metal part. The method comprises the steps of:

(a) providing a composition which includes a base oil having a viscosity of about 75 cSt to about 90 cSt at 25°C and free sulfur present in amounts sufficient to provide extreme pressure lubrication of a Falex reference load of greater than about 4,500 pounds force, where the composition when maintained at 100°C for 2 hours has a copper strip corrosion classification from about 1a to about 3b; and

(b) applying the composition to the metal work part and/or a metal work tool during the metalworking process.

In contrast to Apikos, the present invention as defined by independent Claim 25 of the subject application is directed to a composition for lubricating comprising:

(a) an oil having a viscosity of about 75 cSt to about 90 cSt at 25°C;

(b) free sulfur in an amount sufficient to provide enhanced extreme pressure lubrication, and

(c) a metal corrosion inhibitor to prevent corrosion of the work pieces, where the lubrication is demonstrated by a Four-Ball wear scar diameter of less than about 0.07 mm.

The Examiner acknowledges that Apikos fails to teach or suggest a lubricating composition having the claimed recitations of improved wear, improved load, reduced scarring, and/or noncorrosiveness to nonferrous metallic work pieces. (Office Action dated May 20, 2003, page 3). The Examiner expressly states that these claimed recitations are seen to be inherent. (Id.) An inherency rejection, however, is only proper in a Section 102 setting, not a Section 103. As such the Examiner's rejection of claims 1-5, 7-12 and 15-25 on the basis of inherency is improper and should be withdrawn.

Even if the Examiner intended the rejection of all claims over Apikos to be based on inherency, such a rejection would be improper and Applicant would respectfully traverse. The Specification demonstrates at pages 16-18, that the claimed limitations of the subject claims are not inherent from the disclosure of Apikos. Commercial compositions within the broad viscosity range of 50 to 1,000 SUS (or about 7 to 220 cSt) of Apikos fail to meet the claimed limitations. Further, no metalworking fluid tested by the Apikos provided the improved and noncorrosive lubrication recitations of the independent claims of the subject application. Applicant has surprisingly found that, among other things, an oil having a viscosity from 75 to 90 cSt in combination with the other claimed elements provide enhanced and noncorrosive lubricating compositions.

Not only does Apikos fails to teach or suggest the improved and noncorrosive lubrication recitations of the subject claims, but Apikos fails to teach or suggest the use of oils with a narrow viscosity from 75 to 90 cSt to provide such recitations. The viscosity range of Apikos is nearly a factor of 15 times broader than the claimed viscosity range of the subject application.

Further, Apikos fails to teach or suggest that its lubricating composition could provide noncorrosive lubrication to metallic workpieces. Noncorrosive lubrication, as defined in the Specification at page 11, lines 25-37, is measured on nonferrous metals, which indicate potential corrosive effects to a greater extent than ferrous metals, and is achieved, in part, by selecting a base oil within the narrow viscosity range as contrasted to the widely varying viscosities used in Apikos. Still further, Apikos fails to teach or suggest that its composition could provide noncorrosive lubrication to nonferrous metals or be noncorrosive as defined in the subject application.

Thus, Applicant respectfully submits that the compositions of Apikos do not necessarily possess the claimed recitations of the subject application, making any attempt at an inherency rejection improper. See MPEP § 2112.01. Therefore, reconsideration and withdrawal of the rejections under Section 103 are respectfully requested.

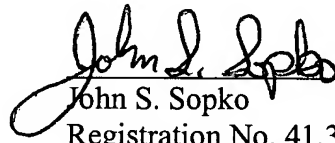
Summary

Therefore, Applicant respectfully submits that independent Claims 1, 11, 20, 24 and 25 and all claims dependent therefrom, are patentably distinct. This application is believed to be in condition for allowance. Favorable action thereon is therefore respectfully solicited.

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 08-2461.

Should the Examiner have any questions or comments concerning the above, the Examiner is respectfully invited to contact the undersigned attorney at the telephone number given below. Please continue to direct all correspondence to Henkel Loctite Corporation, 1001 Trout Brook Crossing, Rocky Hill, CT 06067 to the attention of Steven C. Bauman.

Respectfully submitted,


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